

Exhibit Highlights



Turtle Lagoon: This exhibit features endangered Pacific Green Sea Turtles (sometimes called Black Sea Turtles). They are named for the color of their fat. These turtles live in south San Diego Bay for much of the year, at the warm water discharge channel at the South Bay Power Plant. Sea turtles of all species grow very slowly and breed only after they are 25 or more years old.

Long distance swimmers, the females go back to the sandy beaches from where they were hatched to lay their eggs, 200 at a time. Often a female sea turtle comes back to a beach that has been altered by development and she is unable to deposit her eggs. Depending on the temperature of the sand, a clutch will hatch as either all males or all females. Young sea turtles live at sea in floating seaweed eating small jellyfish and other invertebrates.

Inside the Discovery Center the parent chaperones should highlight a combination of the live and static exhibits.

Jellyfish Kriesel: The jellyfish displayed are Moon Jellies that swim in San Diego Bay. They are related to sea anemones and corals and have similar stinging cells to capture prey. Their form is described as a “medusa”.

THE BAY

Observe the **flatfish** versus the regular (fusiform) fish. When first born, a flatfish looks like most fish: it has an eye on each side of its head. But as the fish grows to be an adult, one eye moves around to the other side. For a fish that swims on one side and lies on the bottom most of the time, it is probably best to have both eyes looking up.

Schooling Tank: California Grunion

Lobster Grotto: California Moray, California Spiny Lobster

THE MARSH: staghorn sculpin, longjaw mudsucker, scallops, navanax, bay star
Sailfin mollie, spotted turbot, halibut

Eel Grass Cylinder. Pacific Seahorse. Pipefish are related to seahorses and live in South San Diego Bay's eelgrass beds.

Octopus: The octopus has several ways to protect itself. It is able to change the color and texture of its skin in order to blend in with its surroundings. The eight strong arms lined with powerful suction cups help the animal attach to rocks and grasp hold of its prey, like a crab. The two big spots on its head are false eyespots that fool a predator into thinking the octopus is much larger than it really is. If threatened, the octopus gives off a cloud of reddish brown liquid called ink to mask its getaway.

Salt Marsh Fishes: Note the small size and dull color of the bottom dwelling salt marsh fishes like the mudsuckers and gobies. This is a form of camouflage.

WentzScope: Children can see the tiny organisms that make up the plankton soup needed by many marine animals.

Chula Vista's Fossil Bay: This exhibit highlights the local geology and natural history of 3 million years ago. The walrus skull cast was made from was found in the Eastlake area during a construction project. A bulldozer cut it in half!

THE UPLANDS

On display are live exhibits of snakes, lizards, and insects that can be found in the dry upland area around the salt marsh

Steelhead Creek: This exhibit sponsored by the San Diego Flyfishers contains Rainbow Trout that are found in the Sweetwater River headwaters at Green Valley Falls in Cuyamaca Rancho State Park. In the past, before the Sweetwater Dam was constructed in 1888, Rainbow Trout swam downstream, out San Diego Bay and into the Pacific Ocean, morphologically changing into Steelhead trout, becoming able to deal with salt water instead of their natal freshwater. Several years later they would return to Green Valley Falls to spawn. There is a major emphasis on protecting the watershed.

OUTSIDE AREAS

Bat Houses: As you exit at the rear of the building look up and find the bat houses built by a local Eagle Scout. Many people are afraid of bats.

Bats are the only mammals that fly. They use special sounds called "echolocation" to find the insects they eat. Each bat can eat 600 mosquitoes an hour. San Diego County has 57 species of mosquitoes, some breeding in salt water.

It is hoped that these bat houses will attract some colonies of Mexican Free Tail Bats or Little Brown Bats. If so, there will have fewer mosquitoes in the summer. They sleep during the day in colonies and hunt at night.

Cliff Swallow Nests: Look up again and find the mud nests made by Cliff Swallows. They come from Argentina in the Southern Hemisphere to share our summer and to eat flying insects. (They return for Argentina's summer, which occurs during our winter.) It takes 1200 mud balls and a lot of swallow saliva to create a nest.

The Shark & Ray Experience: Sharks and rays from the San Diego Bay inhabit this 21,000-gallon exhibit. These are bottom dwelling creatures with cartilaginous skeletons. If there is time after the docent led tour, during their lunch break, small groups of children (5) can visit the exhibit with you for a few moments. Children will be disappointed they can't pet the sharks and rays, but with the return coupon you will be passing out, they can come back with their parents and pet the animals at will.

Rubbing Tables: Near the lunch and observation deck and the aviaries are two rubbing tables. Both tables have the same images. If there is time after the docent led tour and during your lunch break, you can get paper and crayons from the gift shop and have groups of two working at each table. You will need parent help to supervise each table.

Observation Decks: From the lower Observation Deck you can learn about bird adaptations and the Sweetwater Marsh National Wildlife Refuge. Sometimes there are shorebirds feeding at low tide. There are also hummingbird feeders that attract Costa's and Anna's Hummingbirds. It is hoped that Rufous, Allen's and Black-chinned Hummingbirds will also be attracted during migration. From the Upper Observation Deck you can see the upland areas, the wetland area, the mudflats and San Diego Bay.

Composting Garden: As you walk up to the Upper Observation Deck you will see the Nature Center's composting garden. Here the practice of recycling garden clippings and certain kitchen waste is emphasized. The hardscape materials are made from recycled plastic bottles and bags; woods chips and even the upholstery and interior materials from automobiles.

Butterfly and Hummingbird Garden: Plants in this garden have been selected to attract hummingbirds and butterflies. Look for Monarch butterflies laying eggs on Milkweed in the fall. San Diego County has 5 species of hummingbirds that could be attracted to the flowers. Look for Anna's and Costa's year round and during migration Black-chinned, Rufous and Allen's.

History Site: Take a walk down the path beyond the flagpole. There you will see the remains of a loading dock from the kelp-processing plant that was here during World War I. Harvested kelp was unloaded into the big pit, to ferment into acetone. The bricks lining the path are from the old kilns that turned the remains of the fermented kelp into potash. Acetone and potash were the major components of black gunpowder.

Blue Whale Bones: The Blue Whale is the largest animal that ever lived. They can reach over 100 feet in length. The heart is as large as a Volkswagen Bug. Sportfishers key in on Blues for Yellowtail that hide under the whales to keep from getting sunburned.

Bird House: Near the sandcasting is a bird condominium. There are 54 apartments in it. On the East Coast this kind of birdhouse attracts Purple Martins. In fact, Purple Martins will not nest in natural cavities on the East Coast. Thousands of years ago, Native Americans hung up gourds for the Martins and the birds came to depend on artificial nest sites. Purple Martins nest in our mountains.

Grinding Stone: Near the birdhouse and in the gardens are grinding stones called *Metates*. The Kumeyaay people used these tools to prepare seeds and acorns found in the area for food. A smaller, flat stone called a *Mano* was used to smash and grind the seeds.

Outdoor Fossils: These fossils are from the Eastlake area and are about 2 million years old. They are remains of clams, scallops and snails that are now extinct.

Sun Dial and Weather Vane: The sundial is an example of how time was determined before there were mechanical or digital clocks. It can't be reset for Daylight Savings Time. Ask the children if they can tell what time it is.

The weather vane on top of the Burrowing Owl Aviary is another example of how people learned about weather long ago. What direction is the wind blowing?

The Sandcasting: The artwork depicts four distinct areas of the salt marsh and near shore. The sandcasting can be used to focus student's attention on the various areas and the representative wildlife found there.

Lower Left: Shorebirds upon the mudflat. Upper Left: Wading birds, egrets and herons, geese flying. Lower Right: marsh pool with fish, crabs, sea stars, snails, clams. Upper Right: The sky above with pelicans and gulls.

This is also an excellent place to listen to the natural sounds of the salt marsh and upland areas.

The Drought Resistant Gardens: The natural landscaping attracts various forms of wildlife during the year. You may observe rabbits, ground squirrels, insects and birds utilizing the nearby plants for food or shelter.

Green Iguana Exhibit: Verdi is the Nature Center's Green Iguana. He is not native to the area and we use him to teach people about making wise pet choices.

Clapper Rail Kiosk: This interactive exhibit illustrates the calls that Clapper Rails use to attract a mate and to declare territory.

The Burrowing Owl Aviary: The teacher or parent guide should operate the Burrowing Owl panel, since children are often impatient and push all the buttons. The computer is cranky and doesn't like buttons pushed too fast and will not cycle again.

Burrowing Owls are a direct contradiction to common knowledge about owls. They live and raise their young in the abandoned burrows of rabbits, ground squirrels or prairie dogs, instead of living in trees. They eat mice and other rodents like their tree dwelling cousins, however insects are their favorite food. We think of owls hooting in the moonlight, however Burrowing Owls come out during the day and also hunt at night. Their most unique characteristic is their ability to mimic rattlesnakes. Predators such as the Coyote or Badger can be frightened away from nesting owls, when the Burrowing Owl emits the defensive hiss, which sounds like an angry rattlesnake. Although not endangered at this time, the Burrowing Owl is threatened by the loss of traditional habitat to housing, suburban development and agriculture.

The nest exhibit contains photographs of a Burrowing Owl and her chicks, blown infertile Burrowing Owl eggs and toy mice to illustrate how an underground nest looks. Burrowing Owls store mice in the nest, probably to increase the heat.

Boardwalk: As you continue past the Burrowing Owl Aviary, you approach the boardwalk and tidal slough of the Shorebird Aviary. In the slough you will see iridescent blue-tailed Sailfin Molliies, Killifish and Long-jawed Mudsuckers. Many of the wild birds either dive for them or stalk them for food in the pond or even the slough.

You can get a better look at the Burrowing Owls. The small aviary holds a Kestrel, which is the smallest Falcon in the United States.

There is also a sculpture call the "Tree of Life". The artist's inspiration came from a visit to the Nature Center.

The Shorebird Aviary is a walk-through exhibit in which endangered Light-footed Clapper Rails and other non-releasable waterbirds are living. In this exhibit you will walk among birds. **Remind children to walk and to keep feet on the deck and to use quiet voices. Also make sure that both doors are closed before you enter a compartment.**

Clapper Rails are the most seriously endangered water birds in Southern California. The U.S. Fish and Wildlife Service asked the Nature Center educate the public about the plight of these birds and to help

improve their habitat by cleaning up Sweetwater Marsh. The Nature Center has also been asked to enhance their chances of having chicks survive by building floating nesting platforms and developing a captive breeding and release program. As of September 2005 one hundred fifty young Clapper Rails have been released into the remaining salt marshes of Southern California.

Look for California Horn Snails, Killifish and Long-jawed Mudsuckers. You may also see Fiddler and Mudflat crabs. The plants in the slough are the Cordgrass needed by Clapper Rails for nesting, Pickleweed needed by the endangered Savannah Sparrow, Saltgrass, Sea Blight and Batis. All are known as halophytes—plants that can tolerate salt water.

Clapper Rail's Floating Nest: This is another exhibit that can be visited after the docent-led tour. There is generally not enough time for each child to sit in the nest. If you have time, come back to it with small groups of children during your lunch break.

For protection from predators, the Clapper Rail builds its nest deep in the Cordgrass. When the Cordgrass is flooded at high tide the basket nest floats up and down. The Clapper Rail is a secretive bird, seldom seen, but often heard with its distinctive "clapper" sound. Sweetwater Marsh is a nesting place for the endangered Clapper Rail. (You can hear Clapper Rail sounds at the kiosk across from the Burrowing Owl Aviary.)

Eagle Mesa and Raptor Row: The aviaries near the walkway house various raptors, which have had some unfortunate experience and have been injured. Usually they have encountered some man-made object. They cannot survive on their own and are considered non-releasable. All Nature Center birds are non-releasable, except for the captive born. There are interpretive text panels near each enclosure.

Interpretive Trails: Across the driveway you will find the entrance to our interpretive trail system on Gunpowder Point. This 46-acre area was once home to the native Americans called Kumeyaay. It had all the plants and animals of Maritime Chaparral (Coastal Sage Scrub) which the Kumeyaay used for food, medicine and clothing.

For almost 100 years this area has been the site of a kelp processing plant, a cottonseed oil processing plant, a tomato and cucumber farm and large garbage dump. When the Nature Center opened, volunteers started cleaning up the upland, put in trails, and started planting (revegetating) the native plants that once grew here.

Now you can walk close to San Diego Bay to see wintering water birds, spring wildflowers and hawks soaring in search of rabbits and squirrels. You can often find coyote and rabbit scat (droppings), stink bugs and fence lizards basking in the sun. The bilingual interpretive panels tell you more about wetland and upland habitats.

The trail to the south takes you past the seawater return swale. The large cages are "hack enclosures" where the young Clapper Rails learn to catch their own food and survive before they are released into the wild. As you continue, you will see the overflow pond with a small water-sampling pier. The building houses the pumps that bring seawater to the Nature Center's aquaria and to a photo blind from which you can watch birds.

Remember to stay within the ropes.